

WHAT IS CLAIMED IS:

- 1 1. A system comprising:
 - 2 a controller that, when operably coupled to a
 - 3 light source emitting light at a selectively variable
 - 4 output power, determines an output power for emitted light
 - 5 based upon measurements of one or more of forward voltage
 - 6 and current across the light source, ambient temperature
 - 7 around the light source, and a factor specific to mounting
 - 8 of the light source.
- 1 2. The system according to claim 1, wherein the
- 2 forward voltage is employed to determine a forward current
- 3 through the light source, and wherein the output power is
- 4 determined based further upon the forward current.
- 1 3. The system according to claim 2, wherein the
- 2 forward current is measured, calculated or determined from
- 3 a look-up table.
- 1 4. The system according to claim 1, wherein the
- 2 forward voltage is employed to determine a die temperature
- 3 for the light source, and wherein the output power is
- 4 determined based further upon the die temperature.

1 5. The system according to claim 4, wherein the die
2 temperature is calculated or determined from a look-up
3 table.

1 6. The system according to claim 1, wherein the
2 output power is determined without measurement of emitted
3 light.

1 7. An optical subassembly including the system
2 according to claim 1, the optical subassembly further
3 comprising the light source and adapted for transmission of
4 data over an optical transmission medium.

1 8. A computer including the optical subassembly
2 according to claim 7, the computer further comprising:
3 a processor coupled to the controller; and
4 a network connection through the optical
5 subassembly to the optical transmission medium.

1 9. A method comprising:
2 determining an output power for light emitted
3 from a light source emitting light at a selectively
4 variable output power, wherein the determination of the
5 output power is based upon measurements of one or more of
6 forward voltage and current across the light source,
7 ambient temperature around the light source, and a factor
8 specific to mounting of the light source.

1 10. The method according to claim 9, further
2 comprising:

3 employing the forward voltage to determine a
4 forward current through the light source; and
5 determining the output power based further upon
6 the forward current.

1 11. The method according to claim 10, further
2 comprising:

3 measuring the forward current;
4 calculating the forward current; or
5 determining the forward current from a look-up table.

1 12. The method according to claim 9, further
2 comprising:

3 employing the forward voltage to determine a die
4 temperature for the light source; and

5 determining the output power based further upon
6 the die temperature.

1 13. The method according to claim 12, further
2 comprising:

3 calculating the die temperature; or
4 determining the die temperature from a look-up
5 table.

1 14. The method according to claim 9, further
2 comprising:

3 determining the output power without measurement
4 of emitted light.

1 15. An optical subassembly comprising:
2 a light source emitting light at a selectively
3 variable output power; and
4 a controller that, when operably coupled to the
5 light source, determines an output power for emitted light
6 based upon measurements of one or more of forward voltage
7 and current across the light source, ambient temperature
8 around the light source, and a factor specific to mounting
9 of the light source.

1 16. The optical subassembly according to claim 15,
2 further comprising:
3 a temperature sensor proximate to the light
4 source and coupled to the controller, the temperature
5 sensor providing measurements of the ambient temperature
6 for use by the controller.

1 17. The optical subassembly according to claim 16,
2 wherein the controller further comprises:
3 a voltage detector providing measurements of the
4 forward voltage to the controller.

1 18. The optical subassembly according to claim 17,
2 wherein the forward voltage is employed to determine one or
3 both of a forward current through the light source and a
4 die temperature for the light source, and wherein the
5 output power is determined based further upon one or both
6 of the forward current and the die temperature.

1 19. The optical subassembly according to claim 18,
2 further comprising:

3 a memory communicably coupled to the controller,
4 the memory containing one or both of a look-up table for
5 the forward current and a look-up table for the die
6 temperature.

1 20. The optical subassembly according to claim 19,
2 wherein the output power is determined without measurement
3 of emitted light emitted by the light source.